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A Survey on the Scope of Practice for Certified Nurse Midwives in Georgia

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By

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Bachelor of Science
Emory University
2014

Thesis Committee Chair: Sydney Spangler, PhD, CNM, MPH

An abstract of
A thesis submitted to the Faculty of the
Rollins School of Public Health of Emory University
in partial fulfillment of the requirements for the degree of
Master of Public Health
in the Hubert Department of Global Health
2019

Abstract

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By Comfort Mudoh

Introduction: Georgia has one of the worst maternal mortality rates in the nation. It is also in the midst of a maternity services workforce shortage. Allowing Certified Nurse Midwives (CNMs) to practice to the full extent of their education and training is one solution to not only combat the maternal health crisis in Georgia, but it could also alleviate the maternity workforce shortage; yet, Georgia remains one of the states with the most restrictive scope of practice laws for Certified Nurse Midwives. The aim of this study to assess how the current restrictive scope of practice policies influences the ability Certified Nurse Midwives of Georgia to deliver full scope midwifery services to patients.

Methodology: A survey was developed after extensive review of the literature and consult with experts in Midwifery. Convenience and snowball sampling were used to recruit participants. A survey was deployed online and through mail to CNMs practicing in Georgia. Descriptive statistics was used to analyze the data obtained from the survey.

Results: 45% of respondents were not allowed to order screening mammograms independently without physician signature. Most respondents (68%) answered that their practice agreement does not allow them to provide newborn care beyond resuscitation and breastfeeding support. At the hospital or birth center where they deliver, 60% of respondents answered that they are not aware of leadership positions midwives have at the hospital or birth center where they delivered. 44% of respondents were satisfied with their current practice agreement/protocol. Of those who were not "very satisfied" with their current practice or agreement, 51% responded that being able to offer more care options for low risk women will make them change their response to "very satisfied."

Discussion: The results of this study show that CNMs practice agreement varies across practices and what services CNMs are able to offer patient varies based on these agreements. Future research on scope of practice should include in-depth interviews with CNMs to further understanding the practice agreements CNMs work under and CNMs perspective on such practice agreements impact their patients.

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Acknowledgements

Special thanks to Dr. Kate Woeber for bringing me on this project and guiding me each step of the way and being on my thesis committee. Much thanks to Dr. Sydney Spangler for accepting to chair my thesis committee even though she has an immensely full schedule. Thanks to the Georgia Affiliate of the American College of Certified Nurse Midwives for providing the funds to carry out this project. Finally, special thanks to my family and friends who have been on this roller coaster ride with me, always offering their support, encouragement, and prayers.

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Chapter 1: Introduction

Introduction and Rationale

In 2010, Amnesty International released a landmark report, Deadly Delivery, that heralded that the United States was in a maternal health crisis, and the state of Georgia was the worst among all states (Amnesty, 2010). A key finding from this report was that women who wanted to explore the option of having a Midwifery Model of care face many barriers including refusal by insurance companies to reimburse the services of Midwives. In 2010, President Obama signed the Affordable Care Act with key provisions to address barriers to obtaining quality care (Amnesty, 2011). One impact of the Affordable Care Act is that it makes midwives and birth centers more available to women, especially in underserved communities by ensuring Medicaid reimbursement for services and facility fees.

In 2011, Amnesty International provided an update to Deadly Delivery, and reported that legal restrictions on appropriately trained and qualified midwives by states remains a gap that needs to be eliminated (Amnesty International, 2011); it therefore, recommended that state governments revise these restrictions and respect the decision of a woman to choose a midwife or physician as her maternity care provider (Amnesty International, 2011). Almost a decade later, the state of Georgia has not heeded the recommendation of allowing midwives to practice to the full extent of their education and training, i.e. Full Scope of Practice, and the state of maternal health in Georgia has further deteriorated.

Georgia is now enthralled in a maternal mortality public health crisis. Georgia leads the United States in maternal mortality at a rate of 64 deaths per 100,000 live births (Georgia Department of Public Health, 2019) compared with a national average of 20.6 deaths per

100,000 live births (America's Health Rankings.org). The maternal mortality crisis in Georgia also reveals a system riffed with health disparities (Yale Global Justice Partnership (YGJP), 2018) as the black women of Georgia face the brunt of this crisis (YGJP, 2018). The issue of access to and quality of care in Georgia remains a contributing factor to the maternal mortality crisis (YGJP, 2018).

The issue of access to quality healthcare in Georgia is exemplified by the medical workforce shortages, especially maternity care services. More than half of rural Georgia Primary Care Service Areas (PSCAs) have inadequate or no obstetric care services (American College of Nurse Midwives (ACNM), 2015). As of 2016, of Georgia's PSCAs outside Atlanta Metro Service Area, 55% have a deficit or complete absence of obstetric providers, 44% have no obstetric provider, an increase from 36% in 2011, and 76% have no certified nurse midwives (ACNM, 2015). The factors driving this crisis are complex, and addressing this crisis requires a multipronged approach and should be a public health priority for Georgia.

Problem Statement:

The maternity service workforce shortages are exacerbated by Georgia's restrictive practice laws for Advanced Practice Registered Nurses (APRNs), which require that APRNs such as CNMs provide care only under physician supervision. The problem with such restrictive laws is that it limits the number, the distribution of midwives across the state, and the scope of practice of midwives, thereby preventing some Georgians, especially rural Georgians from accessing and benefitting from the services midwives are educated and trained to provide. Allowing APRNs to practice to the full extent of their education and training is one solution to improving the medical workforce shortage in Georgia and improving access to healthcare services (Stephens, 2015), especially for rural Georgians. Furthermore, lifting practice

restriction for APRNs like Certified Nurse Midwives (CNMs) remains a potential solution to combating the maternal mortality crisis Georgia is embroiled in. After all, CNMs are educated and trained to provide care for women throughout their lifespan.

There are 554 CNMs practicing in Georgia, caring for women in hospitals, university medical centers, health departments, birth centers, and home birth practices (Georgia Affiliate ACNM, 2018). As of 2015, CNMs delivered 20% of the vaginal births that occurred in Georgia (ACNM, 2018). A recent study showed that 42% of Georgia's CNM students plan to practice in rural areas (compared to 10% of OB residents) (Harker, 2018). However, with the current practice laws for CNMs in Georgia that require physician supervision, these future CNMs will be unable to practice in rural Georgia because many future Obstetricians do not plan to work in rural Georgia.

Studies have shown that CNMs are capable of providing quality care comparable to physician care and in some cases, have better outcomes. In a systematic review of studies comparing midwifery care to physician care, the review found that women cared for by CNMs compared to women of the same risk status cared for by physicians had lower rates of cesarean birth, lower rates of labor induction and augmentation, significant reduction in the incidence of third- and fourth-degree perineal tears, lower uses of regional anesthesia, and higher rates of breastfeeding (Newhouse et al., 2011). Furthermore, women being taken care of CNMs were more likely to receive prenatal education focusing on health promotion risk reduction behaviors, a more hands on approach with a closer supportive relationship with their provider during labor and birth, and fewer technological and invasive interventions (Oakley et al., 1995). Another systematic review comparing midwife-led models of care and physician-led models of care concluded that women in midwife-led models had a significantly higher chance for a normal

vaginal birth, fewer interventions, and successful initiation of breastfeeding, care during labor provided by a midwife that the woman knew, and increased sense of control during the labor and birth experience (Hartem et al., 2009).

It has also been noted that APRN practice restrictions laws negatively impact patient care. The Institute of Medicine 2011 landmark report, The Future of Nursing, notes that restrictive laws are not without impediments to patient care and the workforce (IOM, 2011) and Hain & Fleck on Barriers to Nurse Practitioner Practice that Impact Healthcare Redesign concur (Hain & Fleck, 2014). The IOM report (2011) pinpoints to one of these impediments when it states that restrictive scope of practice laws poses one of the gravest barriers to access to care (IOM, 2011). Some of the impacts of restrictive practice in Georgia are known. For example, APRNs cannot prescribe schedule II drugs and that their ability to order diagnostics tests is limited (Stephens, 2015). A qualitative research study conducted on behalf of Georgia Watch exploring the practice environment for APRNs in Georgia found APRNs reporting that practice restrictions that require APRNs to obtain a physician signature on orders and prescriptions created additional wait times for patients and slowed provision or care (Stephens, 2015).

The IOM has called for states to allow APRNs practice to the full extent of their education and training (IOM, 2011). For APRNs to practice to the full extent in Georgia, it will require that the Georgia legislature change the current restrictive practice laws to full practice laws. Getting the Georgian legislature to pass such a law has been an uphill battle, even though full scope practice could improve the medical workforce shortage in Georgia, which could increase access to maternity care services, thereby providing one solution to combating the maternal maternity crisis in Georgia.

In 2018, SB 351, a bill that would have removed some restrictions on APRNs ability to practice such as allowing APRNs to order imaging without it being a "life threatening situation" failed (gaap.org); thus, allowing some Georgians, especially in rural areas, void of the services APRNs could provide. The failure of bills such as SB 351 shows that there is still a need to convince key stakeholders like Georgian lawmakers why APRNs like Certified Nurse Midwives practicing to the full extent of their education and training could be a solution to addressing the maternal mortality crisis in Georgia.

Need Statement:

While the study, Perspectives on Advancing Nursing in Georgia, conducted an extensive review of the literature and performed extensive interviews with APRNs and physicians across many health care settings, only 10 APRNs were interviewed in depth (Stephens, 2015). And while studies have focused mostly on the practice environment in Georgia for APRNs as one entity (Stephens, 2015; Hain et al., 2014; IOM, 2010; Donelan et al., 2013; Romaine-Lapine, 2015; Rosenstein et al., 2015; Kurtzman et al., 2017), there are few studies or reports solely looking at the practice environment for Certified Nurse Midwives as a separate APRN specialty nationally or specifically in the state of Georgia. There is a need for more studies focused solely on the perspectives of Certified Nurse Midwives on current practice laws, especially as maternity workforce shortage is a contributing factor to the maternal mortality crisis.

Considering that Georgia is experiencing a maternal mortality crisis, and Certified Nurse Midwives is the only specialty within the APRNs family educated and trained to cover maternity services for low-risk women under the umbrella of full scope midwifery, which covers the entirety of a woman's lifespan, it is necessary to hear from Certified Nurse Midwives about how

current practice laws influence their ability to deliver full scope midwifery services to patients---services at the crux of the maternal mortality crisis.

Purpose Statement

Thus, the aim of this study is to assess how the current restrictive scope of practice policies influences the ability Certified Nurse Midwives of Georgia to deliver full scope midwifery services to patients.

Significance Statement

This study will contribute to filling significant gaps in the literature concerning the impacts of restrictive practice laws in Georgia and will inform policy decisions regarding making Georgia a full scope practice state for APRNS like Certified Nurse Midwives. The results of this study can be valuable to advocates working to move Georgia from a restrictive practice state to a full scope practice state.

Definitions

Maternal Mortality Rate: is the annual number of female deaths per 100,000 live births from any cause related to or aggravated by pregnancy or its management (excluding accidental or incidental causes).

Live birth: refers to the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy, which, after such separation, breathes or shows any other evidence of life - e.g. beating of the heart, pulsation of the umbilical cord or definite movement of voluntary muscles - whether or not the umbilical cord has been cut or the placenta is attached. Each product of such a birth is considered live born (WHO).

Certified Nurse Midwives (CNM): CNM are advanced practice registered nurses with a master's level education in midwifery. CNMs provide healthcare throughout a woman's lifespan. These healthcare services include general health check-ups and physical examinations, pregnancy, delivery, postpartum care, well woman gynecologic care, and treatment for sexually transmitted infections. CNMs are educated and trained to prescribe a broad range of substances, medications, and treatments. CNMs work in diverse settings such as hospitals, birth centers, home, hospital, private practices, and health centers. CNMs are required to attend a midwifery program accredited by the Accreditation Commission for Midwifery Education and must pass the national certification exam administered by the American Midwifery Certification board before deemed eligible for licensure to practice in all fifty states, the district of Columbia, and U.S. territories (Georgia Affiliate ACNM, 2018).

Advanced Practice Registered Nurses: are nurses who have met advanced educational and clinical practice requirements, and often provide services in community-based settings. APRNs' services range from primary and preventive care to mental health to birthing to anesthesia (ANA) Scope of Practice: "procedures, actions and processes that the registered or licensed professional is allowed to perform" (NMBI, 2015).

Chapter 2: Comprehensive Review of Literature

Introduction

This chapter will review the literature on the state of the maternal mortality crisis in the United States briefly, followed by the state of maternal mortality in Georgia, the key factors contributing to the crisis such as the medical provider shortage in Georgia and the current practice environment for APRNs in Georgia, and the solutions that have been recommended to address these factors fueling the crisis.

Maternal Mortality in the United States

Maternal health the United States is in crisis. The maternal mortality rate of the United States paints a picture of this worsening crisis (Yale Global Justice Partnership (YGJP), 2018). The U.S. is currently one of thirteen countries where the maternal mortality rate is worse than it was fifteen years ago (Leontine et al., 2016). This worsening state of maternal mortality uniquely places the U.S. as a lone-wolf among all other post-industrial developed countries that have a decreasing trend on maternal mortality (YGJP, 2018). Over the last two decades, the percentage of maternal mortality due to chronic conditions such as diabetes has risen sharply in the U.S; yet, globally, there has been no parallel rise in maternal deaths due to increasing rates of obesity and other risk factors such as diabetes (Creanga et al., 2014). The " Global, regional, and national levels of maternal mortality, 1990-2015: a systematic analysis for the Global Burden for Disease Study 2015," a project undertaken by Bill and Gates Melinda Foundation, provides the latest maternal mortality rate for the United States at 26.4 per 100, 000 live births (Kassebaum et al., 2016), designating the U.S as the developed nation with the worst maternal mortality rate (Kassebaum et al., 2016).

In the United States, racial disparity is conspicuous in the distribution of the maternal mortality crisis with black women carrying the bulk of the burden. Black women are three to four times more likely to die from pregnancy-related complications compared to white women (CDC Pregnancy mortality surveillance, 2017). The maternal mortality ratio is 43.5 deaths per 100,000 live births for Black women versus 12.7 per 100,000 for white women (CDC Pregnancy mortality surveillance, 2017).

Maternal Mortality in Georgia.

If the U.S. is the poster child for maternal mortality among developed nations, the state of Georgia is the poster child for maternal mortality in the U.S. In 2015, Amnesty International designated Georgia as the state with the worst maternal mortality rate (Amnesty International, 2011). Georgia leads the United States in maternal mortality at 64 deaths per 100,000 live births (Georgia Department of Public Health, 2019) compared with national average of 20.7 deaths per 100,000 live births, increasing from 39.3 deaths per 100,00 live births in 2016 (America's Health Ranking, 2018).When Georgia maternal mortality rate is stratified based on race, ethnicity, and age and compared to the national average as follows: Hispanic 18.1 vs 12.2, black 66.6 vs. 47.2, and white 43.2 vs. 18.1 per 100, 000 live birth; aged 15-24 15.1 vs 11.0, aged 25-34 at 27.6 vs 14.0, and aged 35-44 at 89.4 vs 38.5 deaths per 100, 000 live births Hispanic, White, and Black, respectively, (America's Health Rankings, 2018), Georgia is still above the national average and follows the national trend of racial disparity in the distribution of the maternal mortality burden, with black women in Georgia facing the brunt of the burden.

In overall health, Georgia is ranked 41st (America's Health Ranking, 2018). It has been purported that Georgia's health rankings reflect the poverty in the state (YGJP, 2018). Georgia is the fifth poorest state, and although several poor health outcomes in the U.S. are correlated

with socioeconomic status, and poverty in Georgia, following national trends, is concentrated in black communities and communities of color, poverty does not solely account for the disproportionate rate of maternal mortality in the black population (YGJP, 2018). A systematic review looking at socioeconomic disparities in adverse birth outcomes (Blumenshine et al., 2010), showed that internationally-borne Hispanic women with low socioeconomic status have birth outcomes comparable to white infants (Blumenshine et al., 2010). Even after controlling for education, poverty, and unemployment, racial disparities in maternal health outcomes persist (Lin & Harris, 2008; New York City Department of Health and Mental Hygiene, 2016). Several studies have also noted that it is important that past and present social and economic deprivation, lifelong exposure to racism, institutional discrimination, and contemporary policy decisions be factored into consideration when analyzing health risks (Jackson et al., 2001; Dominguez et al., 2009).

The Yale Global Health Justice Partnership is one organization that has taken a closer look at the state of maternal mortality in Georgia. Applying the national framework for state accountability around issues of maternal health developed by the Black Mamas Matter Alliance and the Center for Reproductive Right to Georgia, the Yale Global Health Justice Partnership report, "When The State Fails: Maternal Mortality and Racial Disparity in Georgia," posits four interconnected system failures as contributing to the maternal health disparities in Georgia: 1) access to and quality of care, 2) insurance access and pricing, 3) funding for maternal health in Georgia, and 4) accountability around data analysis and use, specifically with regards to the state's maternal mortality review committee (YGJP, 2018).

The issue of access to and quality of care in Georgia can be understood via the Three Delays Model (Thaddeus and Maine, 1994). This model was originally developed by researchers

to understand the types of barriers that prevent women from accessing quality obstetric care in the developing world (Thaddeus and Maine, 1994). The model's core pillars are that there are three different phases that may impact maternal outcomes as follows: when one first attempts to seek care, when one attempts to reach adequate health facility, and when one receives care (Thaddeus and Maine, 1994). Delays in each of these phases can result in health deficits (YGJP, 2018).

Applying the Three Delays Model framework to Georgia, Georgian women experience delays in all three phases (YGJP, 2018). Access to appropriate and good quality antenatal care early in pregnancy contributes to improving birth outcomes for both mother and child (YGJP, 2018). American College of Obstetrics and Gynecologists recommends that women schedule their first antenatal visit for approximately six to eight weeks after conception (ACOG, 2012). In Georgia, approximately fifteen percent of women receive delayed antenatal care or no care at all, with this proportion increasing to approximately twenty percent for women of color (Black Mamas Matter Alliance, 2016). However, how this delay in access to antenatal care plays into the maternal mortality rate is difficulty to characterize because over fifty percent of maternal mortality records in the state have significant "missing, unknown, or invalid entries" around antenatal care according to Georgia Department of Public Health (Lindsay, 2015).

When women do realize their pregnancy status, publicly distributed information on reproductive health is lacking in many communities in Georgia, and many women do not realize the they need prenatal care or that they can have access to prenatal care (Meyer et al., 2016). Some women with the knowledge of healthcare services intentionally decide not to seek care due to experiences of unfavorable interactions with the healthcare system (Daniels et al., 2006; Novick, 2009). One of the results of this failure to initiate early care and uneven distribution of

health information is that women may not recognize, and thus may not respond to significant warning signs of compromised health during pregnancy (Lindsay, 2015).

In 2012, Georgia Department of Public health analyzed twenty-five maternal mortality cases, and found that hemorrhage, hypertension, and cardiac disorders were the leading causes of death (Lindsay, 2015). Furthermore, the report concludes that the major contributing factors in these deaths are delays in seeking medical care by women who were unaware of their risk factors and need for certain treatments (Lindsay, 2015).

Adequate maternal care can be provided by family physician, OB/GYN, nurse practitioner, maternal fetal specialist, certified nurse midwives, direct-entry midwives, and physician assistants (cfmidwery.org). While over ninety-eight percent of women give birth in the hospital in the United States, in some states, women may have the option to give birth at a birth center or at home (Andrews, 2016). However, Georgia's legislature has in place many limitations that favors hospital and doctors over birth centers, home births, and other trained professionals such as certified nurse midwives, adding to the complexity to the available options for birth (YGJP, 2018).

Twenty-four percent of black women and seventeen percent of white women in Georgia report not having a personal healthcare provider (The Henry J. Kaiser Family Foundation, 2015). Lack of insurance is a contributing barrier to access to healthcare provider (YGJP, 2018). Overall, nineteen percent of women and approximately twenty-seven percent of women of color are uninsured in Georgia (Amnesty International, 2011; The Henry J. Kaiser Family Foundation, 2015). Even when women do have insurance provided by Medicaid, not all providers accept Medicaid-funded patients (Zertuche and Spelke, 2013) due to low Medicaid reimbursement rates and tedious reimbursement process compared to private insurances (Amnesty International,

2011), and yet, approximately fifty to sixty percent of births in Georgia are funded by Medicaid (Amnesty International, 2011).

Many of the challenges associated with finding healthcare providers are exacerbated for women of rural Georgia. Nearly half of the projected 130, 000 deliveries in Georgia in 2015 were expected to occur in rural areas (Browne, 2015); however, most of the specialized care providers are concentrated in the metro Atlanta area (U.S News and World Report, 2016). To address this challenge, Georgia attempted to strategically locate six designated regional perinatal centers with large, technologically advanced obstetric departments with the capability to handle the most high-risk patients (Georgia Department of Public Health, 2016); unfortunately, these centers are not evenly spread geographically across the state (Georgia Department of Public Health, 2016). These challenges have worsened rather than improved over the years.

In the last two decades, at least thirty labor and delivery units, nineteen of which are in rural areas, have closed in Georgia (Black Mamas Matter Alliance, 2016). In 2015, only three of the twenty-four counties on East Georgia region had hospitals with inpatient obstetrical services (Browne, 2015). Currently, more than eighty-percent of women living in rural Georgia must travel outside their counties to deliver (Browne, 2015), and this long-distance travel may negatively impact mother and infant. A population-based study examining access to Maternity Services for Rural women suggest that longer travel distance is correlated with higher rates of infant mortality (Grzybowski, 2011) and another study by Black Mamas Matter Alliance and The Center for Reproductive Rights suggest higher preterm birth (Black Mamas Matter Alliance, 2016).

Demographics tend to amplify the issue of reimbursement rates faced by rural hospitals (YGJP, 2018). For example, the metro areas of Georgia have higher absolute numbers of

Medicaid enrollees; however, rural counties have higher proportions of their population on Medicaid (Georgia State University Center for State and Local Finance, 2017). These issues are compounded by the fact that obstetrics units also have high fixed cost, particularly when they are operated to the standards necessary to provide the signal functions of emergency obstetric care (EmOC) (YGJP, 2018). In the case of emergency intervention, EmOC keep women alive and healthy. The low birth rates of many rural counties suggest that not enough payments could be generated to keep obstetric departments afloat (Peiyin, 2016). Labor and Delivery units may also close for the following reasons: either clinic or hospital administrators recognize their financial deficits compared to national guidelines (ACOG, 2018), medical malpractice insurance companies do not offer affordable rates (Andrews, 2016), individual OBGYNs make the same calculations as hospitals and drop their OB practices and focus solely on GYN services (Spelke et al., 2016).

With the shortage of OB/GYNs in rural areas, other health professionals still remain unable to compensate for this shortage (YGJP, 2018). With the exception of Metro Atlanta, eighty-nine percent of counties lack a delivering family physician and seventy percent lack certified nurse midwives (Zertuche and Spelke, 2013). Certified Nurse Midwives (CNMs) could not only relieve the overburdened practices in urban areas, they could help reduce the obstetric shortage in rural Georgia if they are allowed to practice as independent delivery professionals. Yet, Georgia law does not designate CNMs as the fully autonomous professionals their training and knowledge equip them to be, but requires that CNMs be supervised by physicians, resulting in most CNMs delivering care where OB/GYNs are concentrated-- hospital settings (YGJP, 2018). Therefore, in rural areas without OBGYNs, CNMs are unable to take their own patients (YGJP, 2018). The impact of this can be seen in Atlanta where CNMs are highly concentrated,

yet, Augusta, which is Georgia's second largest city, has only two CNMs, and both do not deliver babies (Romain-Lapeine, 2015).

Even after accessing care, women may not receive adequate or appropriate care (YGJP, 2018). Several studies have revealed that black patients often report feeling discriminated, undervalued, and disrespected by the healthcare system (Kaplan et al., 2006; Kressin et al., 2008). Such interpersonal racism has been linked to health factors such as psychological trauma, substandard treatment from healthcare providers, and stereotype threats (Bailey et al., 2017). When black women experience discrimination from healthcare providers, these negative interactions are often compounded by other racist experiences they may have experienced throughout their lives (YGJP, 2018). A study by Meyers et al., detailed reports of women "feeling less worthy" to use part of the healthcare system because they receive Medicaid (Meyer et al., 2016). The exposures to such oppression, induces stress that carries mental and physical health consequences (YGJP, 2018).

Such persistent and chronic activation of physiological stress processes arising from negative stereotypes of social identities can lead to increased vulnerability to health risks and accelerated deterioration of body systems, known as a "weathering effect" (YGJP, 2018). In 2017, a ProPublica and NPR investigation into black maternal death reported that research on chromosomal markers of aging indicate that black women, ages forty-nine to fifty-five, appear on average 7.5 "biological" years older than white women (Geronimus et al., 2010; Martin and Montagne, 2017). Furthermore, adverse birth outcomes such as low birth weight and higher rates of preterm births have been linked to self-reported experiences of racism over one's life and prenatal maternal stress (Nuru-Jeter et al., 2009). A study of pregnancy-related maternal mortality in California found that hypertensive disorders of pregnancy and hemorrhage were the

two causes of death most linked to healthcare provider and facility-related factors (Main et al., 2015); however, the same study found that when it came to death due to cardiovascular disease, patient factors such as delays in seeking care and underlying medical conditions played a pivotal role (Main et al., 2015). The pathways leading to maternal mortality in Georgia are complex and not fully understood, therefore, more research is needed to understand these multiple pathways, and how such pathways may operate differently according to factors such as race, class, and location of residency (YGJP, 2018).

Georgia's Medical Provider Shortage

The challenge Georgians having access to quality care can be examined through the lens of Georgia's medical workforce or the inadequacy of such workforce. The workforce shortages become grimmer when we dive deeper to workforce shortages in the maternity care services specialty. The workforce shortage in the maternity care services in Georgia is worrisome because this is the same workforce crucially needed to combat the maternal mortality crisis Georgia faces.

Georgia is the 8th most populous state in the United States, with the most counties--159--second only to Texas with 259 counties (Georgia.gov). Georgia's healthcare workforce includes more than 21000 doctors in various specialties, 7000 Advanced Practice Registered Nurses (APRNs) (constituting more than 5000 Nurse Practitioners, approximately 1300 Nurse Anesthetist, and 554 Certified Nurse Midwives) (Georgia Affiliate of ACNM, 2018), 3200 Physician Assistants, 4900 Dentists, 1100 optometrists, and 2500 chiropractors. Access to health professionals in Georgia varies widely across and within counties, leaving many communities in severe provider shortages (Sweeney, 2016).

Georgia has approximately 211 total doctors per 100, 000 residents; however, the uneven distribution of providers leaves 141 out of 159 Georgia's counties below the statewide average. Sixty-five counties in Georgia have less than one-quarter of the statewide average, i.e., less than 53 doctors for 100, 000 residents (Sweeney, 2016). These geographic trends apply across provider types not sparing nurses, physician assistants, and primary care physicians, with at least three-quarters of Georgia's counties below the statewide average of providers per 100, 000 residents for each category (total doctors, APRNs, physician assistants, and primary care physicians), and close to two-thirds of the counties are below the statewide average in all four categories (Sweeney, 2016).

Georgia's rural communities face the brunt of this severe provider shortages (Sweeney, 2016). Eighty percent (84 out of 105) of the counties with provider ratios below statewide average are rural (Sweeney, 2016); however, some of Georgia's fastest growing counties make this list as well, including the suburban Atlanta counties Forsyth, Barrow, Cherokee, and Gwinnett (Sweeney, 2016). The picture is different for counties that house most of Georgia's medical education infrastructures, as these counties enjoy the highest practitioner-to-resident ratios, and include Floyd, Fulton, Dekalb, Richmond, and Bibb counties (Sweeney, 2016).

Many of Georgia's counties also meet the federal designation of health professional shortage areas, medically underserved areas, or both (Sweeney, 2016). Health Professional Shortage Areas (HPSA) and Medically Underserved Areas or Population are designations made by the U.S. Health Resource Services Administration (HRSA). The above designation "identifies counties, cities, census tracts, or other civil divisions where community members may face a broad shortage of healthcare services or in which certain groups face 'economic, cultural, or linguistic barriers to health care'" (Sweeney, 2016). The goal is to identify gaps in local health

system capacity. HRSA maintains a list of professional shortage areas particularly related to primary care, dental care, and mental health services.

While it is easy to assume that many of Georgia's rural communities fit the above designation, many of Georgia's non-rural communities, including Dekalb and Fulton counties, are not exempted (Sweeney, 2016). Across the provider types tracked by HRSA's designation, all but two of Georgia's 159 counties have shortages as defined by geographic area, population, or facility (Sweeney, 2016). Close to two-third of Georgia's counties are reckoned shortage areas for dental care, primary care, and mental health (Sweeney, 2016). Georgia boasts 148 medically underserved areas or populations--with only 11 counties that do not have one or the other, 141 counties have underserved areas, and 7 have underserved populations (Sweeney, 2016). Many of Georgia's rural or small communities have been entirely designated as medically underserved areas, and as mentioned above, non-rural communities also make this designation. For example, Fulton county is Georgia's most populated non-rural community, yet 200, 000 people live in communities in Fulton county designated as either an underserved area or an underserved population (Sweeney, 2016).

The maternity care workforce in Georgia provides a microscopic view in examining the healthcare workforce shortage challenges in Georgia. Georgia is in a maternity care workforce shortage crisis. Forty-eight percent of Georgia counties do not have an obstetrician (Carlson, 2018). The counties that do have obstetricians, twenty-two percent have only one (Carlson, 2018). The trend is worse for advanced practice nurse providers like Certified Nurse Midwives. Fifty-three percent of Georgia counties do not have a certified nurse midwife, and those counties that have certified nurse midwives, thirty-one percent have only one (Carlson, 2018), despite the fact the Georgia boast at least 500 certified nurse midwives (GA ACNM, 2018). Furthermore,

there is an uneven distribution in the concentration of certified nurse midwives in Georgia. Looking at where most certified nurse midwives work, it is evident that there is a scantiness of certified nurse midwives in South Georgia compared to North Georgia where certified midwives are concentrated (Carlson, 2018).

Most licensed certified nurse midwives work in the hospital (Carlson, 2018); however, of those licensed certified nurse midwives only thirty-two percent provide prenatal or birth care (Carlson, 2018). Reasons cited by certified nurse midwives for not providing midwifery care range from difficulty finding jobs, difficulty finding physician collaborators to difficulty getting hospital privileges, and many certified nurse midwives educated in Georgia exit the state for the same reasons (Carlson, 2018). These reasons cited by certified nurse midwives and students alike point to the bigger issue of the practice environment in Georgia for APRNs.

Scope of Practice (SOP) Issues

Access to care in Georgia is expounded by state laws that limit the ability of other health professions, such as APRNs, from stepping in and filling the void left by OBGYN, especially in rural Georgia (YGJP, 2018). These state laws as it applies to how health professional is allowed to practice are known as Scope of Practice (SOP). Scope of Practice delineates the "procedures, actions and processes that the registered or licensed professional is allowed to perform" (NMBI, 2015). The focus here will primarily be on the Scope of Practice for Advanced Practice Registered Nurse (APRNs).

The practice of APRNs is influenced by four significant policy and regulation initiatives: The Consensus Model for APRN Regulation: Licensure, Accreditation, Certification and Education, the Doctor of Nursing Practice movement, the IOM report, The Future of Nursing: Leading Change Advancing Health, and the Patient Protection and Affordable Care Act

(PPACA) (Hain et al., 2014). Regardless of the various expansion of APRNs role in healthcare, many barriers remain (Hain et al, 2014), for example, the Scope of Practice Laws for APRNs in many states. The scope of practice laws for advanced nurse practitioners are determined by and unique to each state in the United States (AANP.org, 2018). States' scope of practice laws in the United States for nurse practitioners can be full practice, reduced practice, or restrictive practice (AANP.org, 2018).

With Full practice, state practice and licensure laws permit APRNs to evaluate patients, diagnose, order and interpret diagnostic tests, initiate and manage treatments under the exclusive licensure of the state board of nursing (AANP.org, 2018), thereby allowing APRNs to practice to the full extent of their education and training. Full practice is the model recommended by the National Academy of Medicine and the National Council of State Boards of Nursing (AANP.org, 2018).

With Reduced Practice, state practice and licensure laws limit the ability of APRNs to perform in at least one area of APRN practice; this model purports state laws that require a career-long collaborative agreement between an APRN and another health provider in order for the APRN to engage in patient care (AANP.org, 2018), regardless of the APRN's education and training.

With Restrictive Practice, state practice and licensure laws limit the ability of APRNs to perform in at least one area of APRN practice regardless of their education and training; with restrictive practice, state law requires career-long supervision, delegation, or team management by another health care provider in order for the nurse practitioner to administer patient care (AANP.org, 2018).

Georgia remains one of the states with restrictive practice (AANP.org, 2018), despite the Institute of Medicine (IOM) 2011 report, The Future of Nursing: Leading Change Advancing Health, which urges that "advanced practice registered nurses (APRNs) should be able to practice to the fullest extent of their education and training," (IOM, 2011, s8) --that is Full Practice. A 2007 study that investigated each state's regulatory environment for APRN, scored Georgia 48/51, an F grade, designating Georgia as one of the most restrictive state in the nation due to the limitations Georgia places on APRNs scope of practice, which restricts patient's ability to choose APRNs as their provider and APRNs ability to provide advanced nursing care (Lugo et al., 2007); The American Association of Nurse Practitioners concurs (AANP.org, 2018), and this restrictive practice environment is not new for Georgia. The Pearson Report, a compendium of states rules and regulations governing APRN, noted the restrictive SOP of Georgia since 1989 (Pearson, 2009; Pearson, 2011).

The practice authority for APRN in Georgia states that a written protocol is required between the nurse practitioner and the supervising physician, and the written protocol must specify medical acts delegated by the physician and provide for immediate consultation with the physician (scope of practice policy.org, 2018); it gives APRNs the authority to prescribe schedule III-V controlled substances if the APRN is authorized to prescribe and has submitted the above mentioned written protocol with the supervising physician. The problem with such law is that Certified Nurse Midwives (CNM), a specialty under the APRN umbrella, need these drugs for pain management during and after labor. Furthermore, Georgia does not explicitly recognize APRNs as primary care providers (scope of practice policy.org, 2018).

APRNs in Georgia have been fighting an uphill battle towards less restrictive practice environment (Shilling et al., 2014) with their main opposition coming for the Medical

Association of Georgia (MAG) (MAG, 2011). MAG has continually called for opposition to any expansion of APRN scope of practice, including adding prescribing schedule II to APRNs scope (MAG, 2011), which places barriers to the care of patients in labor and patients with Attention Deficit Hyperactivity Disorder (Shilling et al., 2015). In addition, MAG continues to insist on the usage of "supervisory practice" rather "collaborative" practice in describing the interprofessional relationship between physicians and APRNs under SOP (MAG, 2011).

APRNs in Georgia have come to expect such opposition (Shilling et al., 2015). Georgia was the last state to grant APRNs written prescriptive authority for legend and Schedule III-V under an agreement with a delegating physician (Delegation of Authority to Nurse or Physician Assistant, OCGA § 43–34–25, 2010) This legislation was signed into law only after APRNs compromised that Georgia Composite Medical Board will have a role in writing rules and regulations for written prescriptive authority for APRNs (Shilling et al., 2015). This 2006 Prescriptive authority legislation stands together with the 1988 APRN legislation; however, APRNs must choose which legislation to practice under. Certified Nurse Anesthetist while endorsing the 2006 legislation, opted to practice under the 1988 APRN legislation, which allows for APRNs to prescribe schedule II drugs under the delegation of a physician as opposed to the 2006 law which does now allow APRNs to prescribe schedule II drugs (Shilling et al., 2015).

The opposition to full practice SOP is not unique to MAG. Professional organizations like the American Medical Association have raised the argument that APRNs are incapable of providing quality, safe care at the same level as physicians because APRNs do not have the same long and rigorous trainings as physicians do (American Medical Association, 2010; Fairman et al., 2011). A study by Donelan et al., suggest that primary care physicians are not likely to support the expansion of APRNs role regardless of the shortage of primary care providers

(Donelan et al., 2013). In the same study, 70% of physicians while agreeing that APRNs to practice to the fullest extent of their knowledge and skills, still did not agree with APRNs receiving equal pay for providing the same services as them or leading medical homes (Donelan et al., 2013). Furthermore, these physicians also thought that they provided better care than APRNs, to which APRNs stated the opposite (Donelan et al., 2013).

Meanwhile, a cross-sectional study examining if clinical outcomes such as 30-day readmission risk of older rural adult patient vary by level of practice autonomy that states grant to NP found no significant relationship between APRN scope of practice and select patient outcome variables; however, the researchers concluded that there are strong indications that the quality of patient outcomes is not reduced either when the scope of practice is expanded (Ortiz et al., 2018). A Cochrane review that looked the results of substituting APRNs for physicians in primary care settings reported that NPs provided high quality care that leads to improved health outcomes equivalent to physicians (Laurent et al., 2005.). Another systematic review compared the outcomes (such as urgent care visits, rehospitalization rate, emergency care visits, or mortality rates) of patients treated by physicians versus APRNs found no significant difference (Newhouse et al., 2011). However, APRNs are not without support from the physician community. In 2011, the American College of Obstetricians and Gynecologist (ACOG) issued a joint policy statement with the American College of Certified Nurse Midwives (ACNM) describing the practice relations between OB/GYNs, CNMs, and CMs as experts in their respective field of practice who are educated, trained, and licensed, independent clinicians who collaborate as the needs of their patients warrant--an approach that supports team-based (ACOG, 2011, 2018). The statement goes further to state that “quality care is enhanced by collegial relationships characterized by mutual respect and trust; professional responsibility and

accountability; and national uniformity in full practice authority and licensures across all states (ACOG 2011). ACOG and ACNM reaffirmed the above joint statement again in 2018

These restrictive laws are not without impediments to patient care and the workforce (IOM, 2011; Hain et al, 2014). The IOM report (2011) recognizes one of these impediments when it states that restrictive scope of practice laws poses one of the gravest barriers to access to care (IOM Report, 2011). SOP laws that prevent APRNs from practicing to the fullest extent of their knowledge and skills is one of the barriers that impede our ability to achieve the Triple Aim of the healthcare: better care, better health, and lower healthcare cost (Hain et al, 2014).

One such impediment of restrictive laws to patient care is that it limits women's access to midwifery models of care, a model of care that has been shown to provide better outcomes for women and their infants. A Cochrane Review comparing the effects of midwife-led continuity models of care to other models of care for childbearing women and their infants found that women who received midwife-led continuity of care were less likely to have an epidural, had fewer episiotomies or instrumental births, were less likely to experience preterm births, and were at a lower risk of losing their babies; in addition, women's chances of a spontaneous vaginal birth were also increased without a difference in the number of cesarean births (Sandall et al., 2016). While the findings of Sandall et al. study cannot be applied to women with existing serious pregnancy or health complications as these women were not included in the evidence assesses, CNMs are experts who are educated and trained to know when to collaborate/refer to their physician colleagues when their patients' needs warrant it (ACOG & ACNM, 2011).

Another study examining the impact of state regulatory environments on access to midwives and association with perinatal outcomes across populations in the United States created an evidence-based scoring system (Midwifery Integration Scoring System or MISS) to

rank the level of integration of all types of midwives into health systems (Vedam et al., 2018). The authors of the study then examined the relationship between state midwifery integration scores, density of midwives, access to midwives across practice settings, rates of obstetric interventions, and maternal and newborn outcomes (Vedam et al., 2018). MISS scores ranged from 17, the lowest (North Carolina) to 61, the highest (Washington) out of 100 points. The study found that higher MISS scores where associated with significantly higher rates of spontaneous vaginal delivery, vaginal birth after cesarean, breastfeeding at birth and at six months, lower rates of cesarean section, and lower preterm and low birth weight infants (Vedam et al., 2018). Higher MISS scores were also associated with significantly higher rates of physiologic birth, less obstetric interventions, and fewer adverse neonatal outcomes (Vedam et al., 2018).

Certified Nurse Midwives (CNMs)is the only specialty of APRNs educated and trained to take care of women throughout their lifespan. Providing maternity care services such as prenatal, intrapartum, and postpartum care fall under the lifespan umbrella of women services that certified nurse midwives are competent in delivering. Yet, as certified nurse midwives belong to the family of APRNs, the current scope of practice laws also affects them as well.

Legally required supervisory relationships limits certified nurse midwives because inability to find a physician willing to enter into a supervisory relationship often limits what certified nurse midwives can do and where they can practice (Carson, 2018). Under scope of practice laws that do not allow certified nurse midwives to practice to the full extent of their education and training, hospitals are often allowed, but not required to extend staff memberships to certified nurse midwives to the same standing as physicians (Carlson, 2018). One consequence

of such practices is that certified nurse midwives are unable to devise or to vote on policies that direct impact their ability to uphold the midwifery model (Carlson, 2018,).

The nurse midwifery model of care is evidenced-based and has been shown to provide excellent outcomes for women and families such as reducing cesarean rate (Carlson, 2018) A prospective study at community hospital in Sans Francisco from 2005 to 2014 looked the hospital cesarean rate after the hospital initiated a midwifery care model (Rosenstein et al., 2015). This community hospital went from an old model of care where several obstetricians care for women in labor to a new model where several Nurse-Midwives care for women in labor with a single Obstetrician as backup (Rosenstein et al., 2015). The cesarean delivery rate decreased by five percent the first year the change was initiate and two percent year thereafter (Rosenstein et al., 2015).

The results of midwifery care especially in an environment of physician/nurse-midwife collaboration has been noted in Athens Regional Medical Center Midwives practice here in Georgia. The practice started in 1796 to provide accessible, high quality care and delivery for women using Medicaid in Athens/Clarke county. Now, certified nurse midwives at ARMC travel to Green, Barrow, and Banks counties every week to provide prenatal care, and there are plans to expand the model to Morgan and Elbert counties. Some of the outcomes of this practice provides evidence of the benefits the midwifery model can offer Georgians. Athens Regional Midwifery Service boast a preterm birth rate of 6-7% and an infant mortality of 3/1000 liver births compared to Clark county preterm birth rate of 13% and an infant mortality of 6/1000 liver births (Carlson, 2018). Yet sadly, this practice has been taken over by Piedmont, and Piedmont is making big changes to the practice.

Conclusion

In recommending solutions to removing barrier to practice and care, the IOM writes that if APRNs are allowed to practice to the full extent of their education and training, it could develop the necessary workforce to satisfy the health care needs of an increasing portion of the population, especially those living in medically underserved regions (IOM, 2010). In a state with a maternal mortality crisis on its hand and a shortage in the maternal workforce need to combat the same crisis, it is recommend that Georgia increases its use of Nurse-Midwives (Carlson 2018; GA ACNM, 2018); and to increase its usage of Nurse-Midwives, Georgia will to ensure that " applicable laws and regulations allow CNMs to freely utilize the full extent of their education and training; ensure that hospitals provided CNMs with privileges and include them on medical staff and in leadership positions on hospital committees; and support the formation of CNM-OB partnerships to provide appropriate care for all women by risk status" (Carlson, 2018).

Chapter 3: Methodology

Introduction:

The aim of this study is to assess how the current restrictive scope of practice policies influences the ability Certified Nurse Midwives of Georgia to deliver full scope midwifery services to patients. To that end, a survey was deployed online and through mail to CNMs practicing in Georgia. Descriptive statistics was used to analyze the data obtained from the survey.

Population and Sample:

The target population for this study was Certified Nurse Midwives (CNMs) in Georgia. CNMs are bachelor prepared registered nurses with a master's degree in nursing, specializing in midwifery. This population was targeted because CNMs provide healthcare throughout a

woman's lifespan, including maternity services. The survey was administered online using survey tools such as survey monkey, Facebook, and email addresses.

Procedures:

A survey was used to collect data. Survey questions were developed by the primary investigator in collaboration with Dr. Woeber, the creator of this project, after extensive review of the literature and feedback from experts such as Midwifery faculty at the School of Nursing. A pilot study was carried out using three to five Certified Nurse Midwives currently practicing in Georgia in order to review and optimize survey items and survey length. After the pilot study, the survey tool was modified as necessary based on feedback from the pilot group and then distributed to the study sample population.

Participants for the pilot study and main study included the following: 1) Certified Nurse Midwives who are licensed and currently practicing in Georgia 2) Certified Nurse Midwives who are licensed in Georgia, but not currently practicing, but had been practicing in the previous two years in Georgia, 3) Certified Nurse Midwives who recently retired from practice in Georgia within the last five years, and 4) all participants must be able to read and comprehend English.

Recruitment for the pilot study was through convenience sampling of 3-5 Certified Nurse Midwives with expertise in both clinical and academic settings. Following the approval from Emory IRB, approval from ACNM regarding its "Policy for Solicitation of ACNM Members for Research Purposes" was obtained. Following this approval, a request was also made to Midwives of Georgia for the email addresses of its members as well as the mailing addresses of non-member. The mailing addresses were then sorted and arranged in an Excel file. From this file, a mailing list was created, which was used to snail mail the survey to Certified Nurse Midwives practicing in Georgia who do not belong to ACNM.

Recruitment for the main study was accomplished via convenience and snowball sampling methods. These methods were used to contact midwives using email/mail addresses obtained through the ACNM, local ACNM Affiliate meetings, and through personal contacts and Facebook. The survey was administered online with links to the survey posted on Facebook and sent to participants email addresses. A description of the study, its purpose, and an informed consent were attached to the survey site. Participants were directed to the study information page where clicking "Next" to begin survey implied consent. For participants responding to the survey through mail, consent forms were attached to each survey. Mail participants were informed that by returning the filled survey back to the primary investigator, they had consented to the survey. A description of the study, its purpose, and an informed consent were included in the survey package sent to each participant via mail. A return envelope with paid postage was sent to each participant. Recruitment was stopped when 10% participation rate was achieved. Recruitment for the study occurred during March 2019 when the online survey became active and the snail mail survey were sent out.

De-identified data using unique IDs was gathered using Survey Monkey and was stored locally in a password-protected computer. Raw data was accessible only to those with a password and directly involved with this study. The quantitative data was reviewed for normality and implausible values. Missing data will be examined for type and extent. Data was extracted from survey monkey and descriptive analysis was done using Excel.

Instrument:

The survey instrument was developed after reviewing the literature on the practice environment for APRNs in general and in Georgia and consulting with subject matter experts. The survey instrument was then piloted to 3-5 Certified Nurse Midwives with expertise in both

clinical and academic settings to ensure that survey questions were easy to read, understand, and the length of the survey appropriate. The survey instrument was then modified as necessary based on feedback from pilot participants.

Participants were asked about the zip code of their clinical practice, how long they have worked as a CNM in Georgia and at their current clinical practice, the acuity of their patients, and who pays for their services to establish the clinical practice settings and experience of participants. Regarding their scope of practice, participants were asked about how their practice protocol was decided and who was involved in deciding their practice protocol. Participants were asked about their relationship with their back-up physicians, the number of back-up physicians they have, and the type of training of their back-up physicians. Participant were asked if their practice agreement allowed them to do things such as order a mammogram without a physician signature, round on newborns beyond resuscitation and breastfeeding support, round on post-cesarean patients, and round on high-risk antepartum patients. Participants were asked how prescriptions were handled in their practice, who signs off on lab orders, if their practice agreement allowed for expanded competencies such as colposcopy and how they acquired the training for such expanded competences, and if their practice offered services such as nitride oxide or water birth. Participants were asked about the leadership position of CNMs in their practice and if CNM leaders in their practice had voting power. Participants were asked what they considered as risk to their patients. Participants were also asked to rate their satisfaction with their current scope of practice, and what will make them give a more favorable satisfaction rating if they had not chosen the answer option “very satisfied”

Limitations and Delimitation:

This study targeted only licensed Certified Nurse Midwives in Georgia, and not the entire APRN population of Georgia. Considering the participation rate and the size of the population this study targeted, the results of this study are not generalizable to the entire APRN population in Georgia. The results of this study can only be applicable to the population of practicing Certified Nurse Midwives in Georgia.

Ethical Consideration:

This study was submitted to the Institutional Review Board at Emory University and determined to meet the criteria for exemption.

Chapter 4: Results

Introduction:

The link to the online survey was provided to Georgia ACNM member. The mail survey was sent to the rest of CNMs who members of ACNM are not. Georgia currently has 554 CNMs. 62 participants answered questions on the survey (n=62), resulting in 11% participation rate.

Findings:

Demographics.

Of those who completed the survey (n=62), 95% provided their zip-code (list where most are from). 93% of participants in the survey were white and 6.56% identified as midwife of color. 93% of participants live in Georgia. Zip-codes were unavailable for 4% of participants. 1% of participants live in Alabama. Participants came from 36% of Georgia's 159 counties were represented. The leading counties were Fulton (22%), Gwinnett (12%), and Dekalb (8%). 42%

of respondents had at most five years of experience as a CNM, 32% had 21+ years of experience, and 14% had 6-20 years of experience as a CNM. 81% of respondents are currently employed as CNM while 18% are not. 92% of respondents have a clinical practice in GA, and 7% did not.

The leading professional roles for CNM were well-women care (90%), antepartum care (86%), postpartum care (84%), and intrapartum care (78%). More than half (58%) of CNM provide education to midwives/or other healthcare professionals. 84% of CNM attended most of the of births in the hospital, 13% did not attend births, and 1% attended births in free standing birth center. 50% saw 11- 20 patients during a typical office visit. 24% saw 21-25 patients, 10% did not do office visit or home visit. 22% saw mostly high risk, some low risk, 35% saw a balance of high-risk and low risk, 31% mostly low-risk, some high risk, and 8% almost all low risk. In a typical month, 20% attended 1-5 births, 24% attended 6-10 births and 11-15 births, 6% attended 16-20 births, 4% more than 20 births, and 22% of respondents were not doing birth work. In response to type of practice, 36% described their practice as physician owned, 29% corporate owned, 23% other, and 2% are self-employed or midwife owned.

Scope of Practice

When it comes to the negotiation of practice agreement/protocol, 39% of respondents had negotiated their practice agreement/protocol, 29% wanted to negotiate their practice agreement/protocol, but it was not open for discussion, 14% answered that they do not have a practice protocol, 8% did not negotiate their practice agreement/protocol because the protocol was always exactly what as they wanted, 4% were unsure, and 4% had never really looked at the practice protocol. For those who practice agreements/ protocols, 64% of respondents answered that physicians were involved in developing the practice agreement/protocol, 47% answered

midwives, 35% answered office manager or administrator, 14% responded other or unknown, and 12% said not applicable.

- *Orders and Prescriptions*

45% of respondents were not allowed to order screening mammograms independently without physician signature, 31 were allowed to order one without physician signature, 12% were unsure. 60% of respondents wrote prescription under GA protocol for APRN prescriptive authority, 29% electronically ordered prescriptions with physician signature/sign-off, 20% called in prescriptions in physician's name, 12% wrote prescriptions and physician signed them, and 2% did not write or call in prescriptions. In response to how often participants were delayed while waiting to obtain an MD signature for a prescription, 39% responded that were rarely delayed, 27% were never delayed, 16% were delayed monthly, 6% were delayed weekly, and none were delayed daily. Half of respondents said that all of the lab work and diagnostic testing ordered by them were returned directly to them to be signed of, 25% responded most of it were returned directly to them, 6% responded less than half, 6% responded none of it, and 4% said about half of the lab work and diagnostic testing they ordered was returned directly to them to be signed off.

- *Competencies*

Most respondents (68%) answered that their practice agreement does not allow them to provide newborn care beyond resuscitation and breastfeeding support, 18% responded the question was not applicable to them, 6% responded that they were allowed, and 6% were unsure. Participants were asked which of these expanded competences are part of your practice and given the following option: surgical first assistant, ultrasound for dating pregnancy, vacuum assisted vaginal delivery, repair of third degree and fourth degree lacerations, colposcopy,

endometrial biopsy, male circumcision, none of the above, and other. 59% answered surgical first assistant, 34% answered none above, 18% answered ultrasound for dating pregnancy, 18% answered endometrial biopsy, 13% answered repair of 3rd and 4th degree lacerations, 6.82% to the following: vacuum assisted vaginal delivery, male newborn circumcision, and colposcopy, and 2% other. Respondents that chose any of the above competencies, 54% were prepared through apprenticeship and 13% through a formal course.

43% of respondents did not round on post-op cesarean alone or high risk antepartum, 30% rounded on both high risk antepartum and post-partum cesarean, 26% rounded on post-op cesarean only, and none rounded on high-risk antepartum only. 62% of respondents did not offer nitrous oxide, water birth, out of hospital birth, centering pregnancy, postpartum home visits, extended time office visits, or other "midwifery model." 22% of respondents offered extended time office visits, 13% centering pregnancy, 11% water birth, 4% nitrous oxide, 2% out of hospital birth, and 2% postpartum home visits.

- *Midwife Leadership*

In regard to midwife leadership in practice they work, 38% of respondents said CNMs had presence in practice leadership meetings with vote, 29% said CNMs had no leadership positions, 29% said they had a lead midwife, 10% said they had presence in practice leadership meetings with no vote, and 6% responded other. 29% of respondents said CNM did not have a voting presence in decision-making related to perinatal care at their institution (hospital, birth center), 27% reported CNMs had a voting presence, 31% were unsure. At the hospital or birth center where they deliver, 60% of responded answered that they are not aware of leadership positions midwives have at the hospital or birth center where they delivered, 23% responded that

midwives are on interprofessional committees that influence decision-making, and 15% responded that midwives have a separate committee with an MD liaison.

- *Satisfaction with Current Practice Agreement.*

44% of respondents were satisfied with their current practice agreement/protocol, 21% were dissatisfied, 12% were neutral, 10% were very satisfied, and 4% were very dissatisfied. Of those who were not "very satisfied" with their current practice or agreement, 51% responded that being able to offer more care options for low risk women will make them change their response to "very satisfied", 43% wanted more decision making- power to change their response to "very satisfied" , 33% wanted expanded scope of practice to change their response to "very satisfied", 25% wanted fewer hours, 25% wanted low-risk patients, and 15% wanted more power to choose which students to precept, 15% chose "other", and 7% wanted fewer responsibilities to change their response to "very satisfied."

Other Findings

In response to what increases risk to my patients, 41% said none of the provide options applied to their employment situation, 32% responded that I am required to care for patients with excessive risk, 32% said I am required to manage the care of too many patients in the office, 26% answered my patients regularly request unnecessary interventions, 17% said my practice protocol are not evidence-based, 15% are required to manage the care of too many patients on call, 13% said physicians do not support the plan of care developed by myself and my patients, 8% said patients declined needed interventions, 6% are not currently taking care of patients, 4% selected other, and 2% said back-up physicians do not respond as quickly as I need them to respond.

Chapter 5: Discussion/Conclusion

Study results show that the restrictions placed on the scope of practice of CNM vary at the practice level. What CNMs are allowed to do at their practices are dependent on the practice agreement/protocol, and the development of these agreement/protocol involve more physicians than CNMs (64% vs. 47%, respectively); these practice protocols/agreements do not allow much room for negotiation (only 39% of CNM were able to negotiate their practice agreement/protocol and 29% did not have the option to negotiate even though they wanted to).

Close to half of CNMs (45%) are allowed to order screening mammograms independently (without a physician signature and 31% were not allowed). It is surprising, albeit refreshing that this CNMs can order screening mammograms independently because Georgia status limits the situations in which APRNs can order diagnostics tests such as MRI without physician authorization, specifying that APRNs who are delegate this authority can only do so in life-threatening situations (Stephens, 2015). Yet, screening mammograms are used as part of breast cancer prevention. The U.S. Preventive Task Force recommends biennial mammography screening for breast cancer for women age 50-74 (Siu, 2016), and breast cancer screening is within the education and skills of CNMs. Therefore, for the 31% of CNMs in this sample that are not allowed to order such screening mammograms independently, it imposes restriction on their scope of practice.

Majority of CNMs in this study order prescriptions under GA APRN prescriptive authority for APRNs. In Georgia, the physicians who delegate prescriptive authorities to APRNs cannot have a written protocol agreement with more than four APRNs (Stephens, 2015). One consequence of such law is that it limits the number of CNMs who can write prescriptions, thereby depriving a patient of this service a CNM is fully educated and trained on how to

execute. Based on the results of this study, CNMs are not practicing at the full extent of their education and skills. These findings are reflective of the current scope of practice laws in Georgia. The practice authority for NPs in Georgia does require a written protocol between the nurse practitioner and the supervising physician, and the written protocol must specify medical acts delegated by the physician and provide for immediate consultation with the physician (scope of practice policy.org, 2018);

While more than half of CNM are able to offer expanded competencies such as first surgical assistance, which most learn on the job, most CNMs are not able to offer midwifery model type of care. For example, 62% of CNMs in this study said did not offer nitrous oxide, water birth, out of hospital birth, centering pregnancy, postpartum home visits, extended time office visits, or other "midwifery model." Meanwhile, only 22% of respondents offered extended time office visits, 13% centering pregnancy, 11% water birth, 4% nitrous oxide, 2% out of hospital birth, and 2% postpartum home visits. However, CNMs would love the opportunity of offer such midwife centered care to patients. More than of respondents in this study responded that their current satisfaction with their current practice agreement will improve to “very satisfied” if they could offer more care options for low-risk patients. The fact most CNMs in this study are unable more midwifery model of care options to patients, deprives patients of the excellent benefits of the nurse midwifery model of care. The nurse midwifery model of care is evidenced-based and has been shown to provide excellent outcomes for women and families such as reducing cesarean rate (Carlson, 2018) A prospective study at community hospital in Sans Francisco from 2005 to 2014 looked the hospital cesarean rate after the hospital initiated a midwifery care model (Rosenstein et al., 2015). This community hospital went from an old model of care where several obstetricians care for women in labor to a new model where several

Nurse-Midwives care for women in labor with a single Obstetrician as backup (Rosenstein et al., 2015). The cesarean delivery rate decreased by five percent the first year the change was initiate and two percent year thereafter (Rosenstein et al., 2015).

CNMs in this study are not present at the decision tables where policies regarding the care of their patients are being decided, especially at the hospitals CNMs in this study deliver babies. Less than 40% answered that CNMs had presence in practice leadership meetings with vote, less than 30% said CNM had voting power regarding decision about perinatal care in the hospital where they deliver, and many (62%) were not aware of any leadership positions midwives had in the hospital where they delivered, reflecting another consequence of restrictive practice law that have recorded in the literature. In "Nurse-Midwives in Georgia: Value for Georgia Citizens" (Carlson, 2018), Carlson notes that under scope of practice laws that do not allow certified nurse midwives to practice to the full extent of their education and training, hospitals are often allowed, but not required to extend staff memberships to certified nurse midwives to the same standing as physicians (Carlson, 2018). One consequence of such practices is that certified nurse midwives are unable to devise or to vote on policies that direct impact their ability to uphold the midwifery model (Carlson, 2018,). It is not surprising the second highest respond after offering more options to low risk patients, wanting more decision-making power came next in respond to what will make CNM "very satisfied" with their practice agreement.

Finally, one third of respondents wanted full scope practice for CNM to be "very satisfied" with their practice agreements. The CNM in this study are not the only calling for CNMs to practice to the full scope of practice. In recommending solutions to removing barriers to practice and care, the IOM writes that if APRNs are allowed to practice to the full extent of their education and training, it could develop the necessary workforce to satisfy the health care

needs of an increasing portion of the population, especially those living in medically underserved regions (IOM, 2010).

This study has several limitations. First, recruitment was accomplished via convenience and snowball sampling methods. These methods were used to contact midwives using email/mail addresses obtained through the ACNM, local ACNM Affiliate meetings, and through personal contacts and Facebook, thus, results cannot be generalized to the larger population. The study specifically recruited licensed CNMs, therefore, we were unable to access the input from midwives who have let their licenses expired or lapsed. Selection bias is possible as participants had to choose to click to take the survey. The design of the survey limited answer options and did not allow room for participants to elaborate on their answer choices. Furthermore, due to the small sample size, this study only looked as simple descriptive such as frequency; therefore, future studies will benefit from extensive analyses.

Despite these limitations, 10% of the CNM population was represented in this study. Also, this is study is first of its kind to focus solely of the experiences of Georgia CNMs and their practice environment. The results of this study show that CNMs practice agreement varies across practices and what services CNMs are able to offer patient varies based on these agreements. Future research on scope of practice should include in-depth interviews with CNMs to further understanding the practice agreements CNMs work under and CNMs perspective on such practice agreements impact their patients.

Chapter 6: Recommendation/Implication

CNMs are practicing under restrictive practice agreement/protocol, which varies across clinical practices rather than practicing to the full extent of their education and skills. As Georgia combats a maternal mortality crisis amidst a maternity services workforce shortage, it cannot afford CNMs not delivering care at the full extent of their capacities. Preventing CNMs from independently ordering mammograms for breast cancer screening is not using CNMs to the full extent of their capacities. Limiting physicians to have written protocols to only four CNMs limits staffing, and CNMs have a written protocol to a "supervising" physician bind CNMs to physician, meaning that for the most part, CNMs can only go where physicians go, and one consequence of this is limiting patient access to CNMs, especially in rural areas. Eliminating restrictive scope of practice laws will not only allow CNMs to practice to the full extent of their education and training, it will standardize the services patients can expect to receive from CNMs from one practice to the next. The result of this study supports the recommendation from IOM that APRNs should be allowed to the full extent to their education and training, and it's a one Georgia should heed. While combating maternal mortality is complex challenge, full scope practice for CNMs is one solution Georgia can start implementing now.

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